

ABSTRACT OF DISCLOSURE

With respect to the relative intensity noise (RIN) for inputs to an optical modulator or the signal-to-noise ratio (SNR) for outputs therefrom, the optical modulator modulating coherent lights of different wavelengths obtained by slicing a spectrum of the multi-wavelength light, the shape of a spectrum of a multi-wavelength light is controlled so that predetermined RIN and SNR can be obtained in accordance with transmission system parameters (the type and distance of optical fibers, the number of repeaters), thus enabling design meeting a performance specification for a conventional transmission section using semiconductor lasers.